Example 01:
Database Management System

1. Create a student table having the field roll, name, dept, year, semester by setting roll as a primary key and insert the following values to the above table.

Roll	Name	Dept.	Year	Semester
06543201	Rahim	BBA	2nd	1st
06543202	Karim	ICE	2nd	1st
06543203	Motin	CSE	1st	2nd
05654456	Swadhin	CSE	1st	2nd
05654457	Hena	BBA	4th	2nd
05654458	Sohag	CSE	3rd	1st

2. Create a studentInfo table having the field roll, name, fatherName, address and mobile by setting roll as a primary key and insert the following values to the above table.

Roll	Name	Father Name.	Address	Mobile
06543201	Rahim	Ataur	Rajshahi	01719201233
06543202	Karim	Tareq	Dhaka	01719202020
06543203	Motin	Rahman	Khulna	01719202678
05654456	Swadhin	Fazlu	Rajshahi	01719204564
05654457	Hena	Rahman	Rajshahi	01119212020
05654458	Sohag	Fazlul	Natore	01719202222

3. Now find out the following answers (Queries)
    i. Find out the names of those students who
        i. is in 1st semester.
        ii. is in 2nd year.
        iii. is in CSE
        iv. roll is 06543201
    ii. Find out the names, address and mobile for those students whose
        i. father's name is Rahman.
        ii. mobile is 01719202020.
        iii. address is Rajshahi
        iv. address is Rajshahi and father's name Rahman
        v. roll is 05654456

Example 02:
Database Management System

1. Consider the following database with these relations.

   employee (<u>employee_name</u>, street, city)

   works (<u>employee_name</u>, company_name, salary)

   a) Insert the following data into those relations

Employee		
employee_name	street	City
Arif	51 upashahar	Rajshahi
Sumon	52 east	Moynamati
Sagor	Neemgachhi	Sirajgong

works		
employee_name	company_name	salary
Sumon	Agrani	12000
Abdul	Sonali	13000
Himesh	Agrani	6000

Abdul	Binodpur	Rajshahi
Himesh	Nazrul avenue	Dhaka
Amirul	Chawk bazar	Sylhet
Sajib	99 north	Chittagong

Amirul	Sonali	20000
Sagor	Sonali	8000
Arif	Janata	13000
Sajib	Janata	9000

b) Find the names of all employees who live in Rajshahi city
c) Find the names and streets address of all employees who live in Rajshahi city
d) Find the names of all employees who work for (i) Sonali (ii) Agrani (iii) Janata
e) Find the names and salary of all employees who work for (i) Sonali (ii) Agrani (iii) Janata
f) Find the names of all employees whose salary is (i) 12000 (ii) >=12000 (iii) <12000
g) Find the names and company of all employees whose salary is (i) 12000 (ii) >=12000 (iii) <12000
h) Find the names, streets and cities of all employees who work for Agrani.
i) Find the names, streets and cities of all employees who earn >=10000.
j) Find the names, company and salary of all employees who live in Rajshahi city.
k) Find the names, streets, cities and companies of all employees who earn >=10000.
l) Find the names, streets and cities of all employees who work for Sonali and earn more than 12000.
m) Find all employees in the database who do not work for Sonali Bank.
n) Modify the database so that "Arif" now lives in Natore.
o) Give all employees of "Agrani" Bank 10 percent salary raise.
p) Delete all records for sagor in employee table.
q) Add a column manager in the company table.

Example 03:
Database Management System

1. Consider the following Insurance database with these relations.
   (i) person (nid, name, address)
   (ii) car (license, year, model)
   (iii) accident (date, driver, damage-amount)
   (iv) owns (nid, license)
   (v) log (license, date, driver)

a) Insert the following data into those relations

Person

nid	name	Address
123451	Arif	Rajshahi
123452	Sumon	Moynamati
123453	Sagor	Sirajgang
123454	Abdul	Rajshahi
123455	Himesh	Dhaka
123456	Amirul	Sylhet
123457	Sajib	Chittagang

Car

license	year	model
12-3000	2012	Axio
11-3000	2008	Corolla
12-4000	2013	Axio
12-5000	2013	Premio
11-5000	2010	Nano
11-6000	2011	Alto
12-6000	2015	Nano Twist

accident

date	driver	d_amount
12/01/2013	Arif	10000

owns

Nid	license
123451	11-3000

Log

license	date	driver
11-3000	12/01/2013	Arif

25/09/2015	Komol	12000
20/06/2014	Bahadur	11000
20/12/2011	Abdul	8000
19/09/2015	Akter	7000
15/05/2013	Arif	20000
20/08/2014	Arif	15000

123452	12-4000
123453	12-5000
123454	11-5000
123455	11-6000
123456	12-6000
123457	12-3000

12-4000	25/09/2015	Komol
11-6000	20/06/2014	Bahadur
11-5000	20/12/2011	Abdul
12-6000	19/09/2015	Akter
11-3000	15/05/2013	Arif
11-3000	20/08/2014	Arif

b) Find the names of all person who live in Rajshahi.
c) Which model was sold in 2013?
d) Find the name of those driver where damage amount is between 10000 and 15000.
e) Find the national id (nid) of those person who has Axio.
f) Find the name and address of those person who has Alto.
g) Who (driver) was involved in the accident by 20/12/2011?
h) Who was the owner of the car with license 12-4000?
i) Who was the owner of the car whose driver is Arif?
j) Which car was involved in accident by 19/09/2015?
k) Find the number of accidents in which the cars belonging to “Arif” were involved.
l) Find the dates of accidents in which the cars belonging to “Arif” were involved.
m) Modify the database so that “Arif” now lives in Nato

Example 04:
Database Management System

Consider the following database with four relations.

employee(employee-name, street, city) works(employee-name, company-name, salary)	company(company-name, city) manages(employee-name, manager-name)

a) Insert the following data into those relations

Employee		
employee-name	Street	city
Arif	51 upashahar	Rajshahi
Sumon	52 east	Moynamati
Sagor	Neemgachhi	Sirajgong
Abdul	Binodpur	Rajshahi
Himesh	Nazrul avenue	Dhaka
Amirul	Chawk bazar	Sylhet
Sajib	99 north	Chittagong

company	
compny-name	city
Agrani	Rajshahi
Sonali	Sylhet
Janata	Dhaka

Works		
employee-name	company-name	salary
Sumon	Agrani	12000
Abdul	Sonali	13000
Himesh	Agrani	6000
Amirul	Sonali	20000
Sagor	Sonali	8000
Arif	Janata	13000

Manages	
employee-name	manager-name
Amirul	Amirul
Abdul	Amirul
Sagor	Amirul
Sumon	Sumon
Himesh	Sumon
Arif	Arif

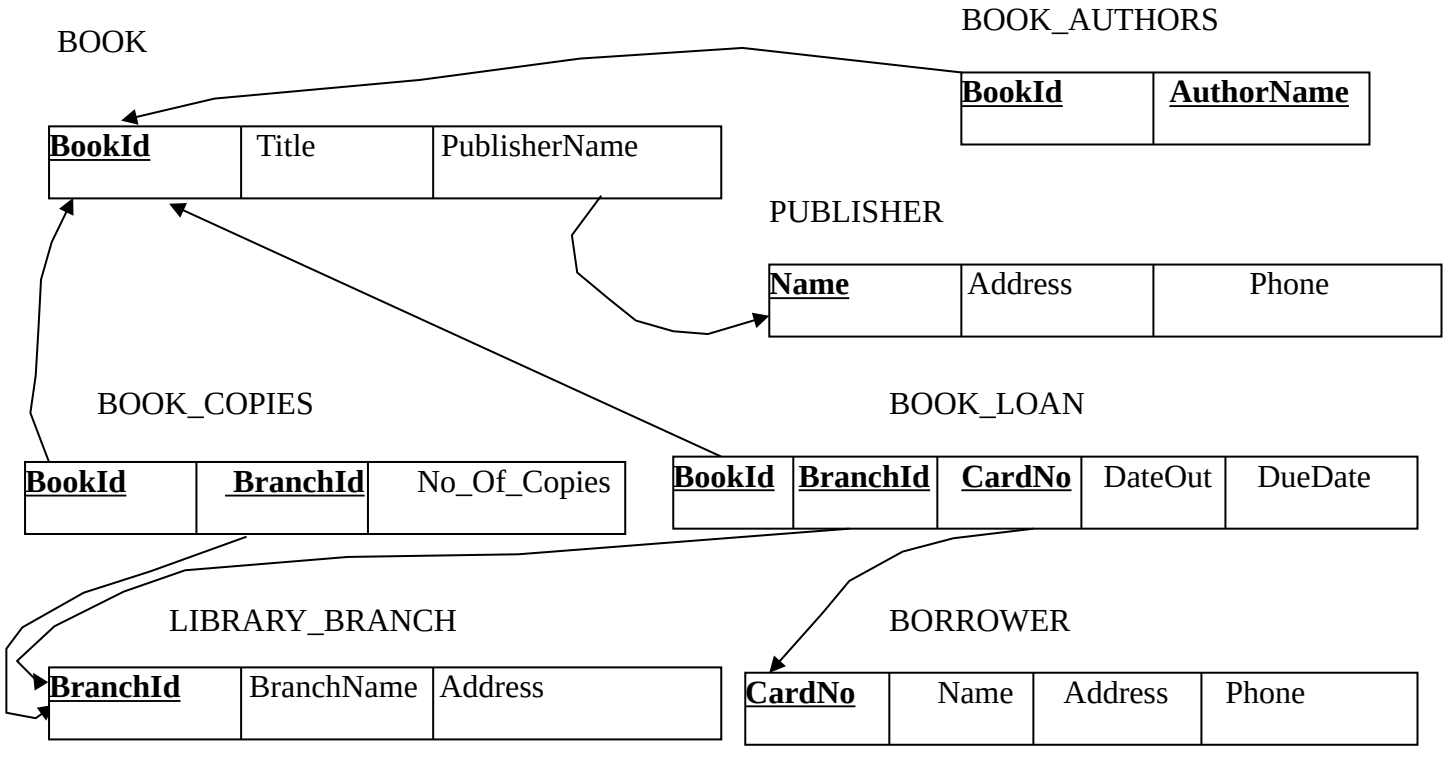
Sajib	Janata	9000

Sajib	Arif

b) Find the names of all employee who work for “Sonali”.
c) Find the names, streets and cities residence of all employees who work for “Agrani”.
d) Find the names, streets and cities residence of all employees who work for “Sonali” and earn more than 1,20,000 per annum.
e) Find all employees in the database who live in the same cities as the companies for which they work.
f) Find all employees in the database who live in the same cities and on the same streets as do their managers.
g) Find all employees in the database who do not work for “Sonali” Bank.
h) Find all employees in the database who earn more than each employee of “Janata” Bank
i) Find all employees who earn more than the average salary of all employees of their companies.
j) Find the company that has the most employees.
k) Find the company that has the smallest payroll.
l) Find those companies whose employees earn a higher salary, on average, than the average salary at “Agrani” Bank.
m) Modify the database so that “Arif” now lives in Natore.
n) Give all employees of “Agrani” Bank 1 10 percent raise.
o) Give all managers of “Agrani” Bank a 10 percent salary raise.
p) Give all managers a 10 percent salary raise unless salary becomes greater than 19,000; in such cases, give only a 3 percent salary raise.
q) Delete all tuples in the works relation for employees of “Janata” Bank.
r) Define a view consisting of manager-name and average salary of all employees who work for that manager. Now try to modify that view.

Example 05:
Database Management System

A relational database Schema for LIBRARY database is given below.



Perform the following Queries on the Database.

1. How many copies of the book titled DBMS are owned by the library branch whose name is “CSE Seminar library”?
2. How many copies of the book titled DBMS are owned by each library branch?
3. Retrieve the names of all borrowers who do not have any books checked out?
4. For each book that is loaned out from the “CSE seminar library” branch and whose DueDate is today, retrieve the book title, the borrower’s name, and the borrower’s address.
5. For each library branch, retrieve the branch name and the total number of books loaned out from that branch.
6. Retrieve the names, addresses, and number of books checked out for all borrowers who have more than two books checked out.
7. For each book authored by “Ivan BayRoss”, retrieve the title and the no. of copies owned by the library branch whose name is “RU central library”.

Book

BookId	Title	PublisherName
100.001cn	Computer Network	PHI
100.002dsc	Database System	Tata
100.003ds	Digital System	PHI
100.004db	DBMS	PHI
100.005ora	Oracle 2000	Galgotia

Book_Author

BookId	AuthorName
100.001cn	A S Tanenbaum
100.002dsc	Silberschatz
100.003ds	Ronald J Tocci
100.004db	Ivan Bayross
100.005ora	Ivan Bayross

Publisher

Name	Address	Phone
PHI	20 Delhi Super Market	01715-454678
Tata	North Kolkata	0156-2345445
Galgotia	Mumbai	0192-203490

Book_Copies

BookId	BranchId	No_Of_Copies
100.001cn	1001	2
100.001cn	1002	5
100.002dsc	1001	3
100.002dsc	1002	4
100.003ds	1001	3
100.003ds	1003	5
100.004db	1001	2
100.004db	1002	5
100.005ora	1001	2
100.005ora	1002	7

Library_Branch

BranchId	BranchName	Address
1001	CSE Seminar Library	Rajshahi
1002	RU Central Library	Rajshahi
1003	DU Central Library	Dhaka

Borrower

CardNo	Name	Address	Phone
10001	Saidur	CSE	01714-400567
10002	Rafiq	PHYSICS	0194-300456
10003	Masud	CSE	0156-345678
10004	Nobir	ICT	01199-203456

BOOK_LOAN

BookId	BranchId	CardNo	DateOut	DueDate
100.001cn	1001	10001	15-Jan-15	15-Feb-15
100.001cn	1002	10002	25-Jan-15	25-Feb-15
100.002dsc	1001	10003	20-Feb-15	20-Mar-15
100.002dsc	1002	10004	15-Mar-15	15-Apr-15

100.003ds	1001	10001	07-Jun-15	07-Jul-15
100.003ds	1003	10002	15-Oct-15	15-Nov-15
100.004db	1001	10003	25-Oct-15	25-Nov-15
100.004db	1002	10004	15-Nov-15	15-Dec-15
100.005ora	1001	10003	22-Dec-15	22-Jan-16
100.005ora	1002	10001	25-Dec-15	25-Jan-16

1. **Trigger:** If a student tuple is inserted for a student with GPA > 3.9, add a record to Apply table with hallId 01 and hallName BB. For GPA>3.7, add a record to Apply table with hallId 02 and hallName ZR. For GPA>3.5, add a record to Apply table with hallId 03 and hallName MB. For GPA>3.3, add a record to Apply table with hallId 04 and hallName SJ. For GPA>3.1, add a record to Apply table with hallId 05 and hallName FH. In all cases, add the system data for applyDate field.